

APPENDIX 8

**VIRGINIA WATER QUALITY IMPROVEMENT FUND
POINT SOURCE GRANT AND
OPERATION AND MAINTENANCE AGREEMENT
Contract #440-S-09-07**

Falling Creek

THIS AGREEMENT is made as of this 24th day of November, 2008, by and between the Director of the Virginia Department of Environmental Quality in his official capacity, or his designee (the "Director"), and Chesterfield County (the "Grantee").

Pursuant to the Virginia Water Quality Improvement Act of 1997, Chapter 21.1, Title 10.1 of the Code of Virginia (1950), as amended (the "Act"), the General Assembly created the Virginia Water Quality Improvement Fund (the "Fund"). The Director, in coordination with the Director of the Department of Conservation and Recreation, is authorized by the Act to make Water Quality Improvement grants related to point source pollution control, in accordance with guidelines established pursuant to Section 10.1-2129 of the Code, and enter into agreements with grantees under the Act which shall, in accordance with Sections 10.1-2130 and 10.1-2131, provide for the payment of the total amount of the grant and require proper long-term operation, monitoring and maintenance of funded projects.

The Grantee has been approved by the Director to receive a Grant from the Fund subject to the terms and conditions herein to finance 35 percent (35%) of the cost of the Eligible Project, which consists of the design and installation of Nutrient Removal Technology as described herein. The Grantee will use the Grant to finance that portion of the Eligible Project Costs not being paid for from other sources as set forth in the Total Project Budget in Exhibit B to this Agreement. Such other sources may include, but are not limited to, the Virginia Water Facilities Revolving Fund, Chapter 22, Title 62.1 of the Code of Virginia (1950), as amended.

As required by the Act, this Agreement provides for payment of the Grant, design and construction of the Project, and proper long-term operation, monitoring, and maintenance of the Project. This Agreement is supplemental to the State Water Control Law, Chapter 3.1, Title 62.1 of the Code of Virginia (1950), as amended, and it does not limit in any way the other water quality restoration, protection and enhancement, or enforcement authority of the Director, the State Water Control Board (the "Board") or the Department of Environmental Quality (the "Department").

**ARTICLE I
DEFINITIONS**

1. The capitalized terms contained in this Agreement shall have the meanings set forth below unless the context requires otherwise and any capitalized terms not otherwise defined herein shall have the meaning assigned to such terms in the Act:

(a) "Agreement" means this Virginia Water Quality Improvement Fund Point Source Grant and Operation and Maintenance Agreement between the Director and the Grantee, together with any amendments or supplements hereto.

(b) "Authorized Representative" means any member, official or employee of the Grantee authorized by resolution, ordinance or other official act of the governing body of the Grantee to perform the act or sign the document in question.

(c) "Eligible Project" means the particular Nutrient Removal Technology described in Exhibit A to this Agreement to be designed and constructed by the Grantee with, among other monies, the Grant, with such changes thereto as may be approved in writing by the Director and the Grantee.

(d) "Eligible Project Costs" means costs of the individual items comprising the Eligible Project as permitted by the Act with such changes thereto as may be approved in writing by the Director and the Grantee.

(e) "Extraordinary Conditions" means unforeseeable or exceptional conditions resulting from causes beyond the reasonable control of the Grantee such as, but not limited to fires, strikes, acts of God, and acts of third parties that singly or in combination cause material breach of this Agreement.

(f) "Facility" means all plants, systems, unit processes, equipment or property related to the Project, and owned, operated, or maintained by the Grantee and used in connection with the treatment of wastewater.

(g) "Grant" means the particular grant described in Section 4.0 of this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

(h) "Monetary Assessment" means a contractual or stipulated penalty as described in Section 10.1-2130 of the Code.

(i) "Nutrient Removal Technology" means state-of-the-art nutrient removal technology, biological nutrient removal technology, or other nutrient removal technology, as further described in Section 10.1-2117 of the Code.

(j) "Preliminary Engineering Proposal" means the engineering report and preliminary plans for the Project as described in 9 VAC 25-790-110, as modified by the final engineering design approved by the Department.

(k) "Total Eligible Project Budget" means the sum of the Eligible Project Costs as set forth in Exhibit B to this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

(l) "Total Project Budget" means the sum of the Eligible Project Costs and any ineligible costs that are solely the responsibility of the Grantee, as set forth in Exhibit B to this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

(m) "Project Engineer" means the Grantee's engineer who must be a licensed professional engineer registered to do business in Virginia and designated by the Grantee as the Grantee's engineer for the Project in a written notice to the Department.

(n) "Project Schedule" means the schedule for the Project as set forth in Exhibit C to this Agreement, with such changes thereto as may be approved in writing by the Director and the Grantee.

ARTICLE II

SCOPE OF PROJECT

2. The Grantee will cause the Project to be designed, constructed and placed in operation as described in Exhibit A to this Agreement to meet effluent concentration limitations of 5.0 mg/l for total nitrogen on an annual average basis.

ARTICLE III SCHEDULE

3. The Grantee will cause the Eligible Project to be designed, constructed and placed in operation in accordance with the Project Schedule in Exhibit C to this Agreement.

ARTICLE IV COMPENSATION

4.0. Grant Amount. The total grant award from the Fund under this Agreement is \$10,324,298 and represents the Commonwealth's thirty five (35) percent share of the Total Eligible Project Budget. Any material changes made to the Eligible Project after execution of this Agreement, which alters the Total Eligible Project Budget, will be submitted to the Department for review of grant eligibility. The amount of the grant award set forth herein may be modified from time to time by agreement of the parties to reflect changes to the Eligible Project or the Total Eligible Project Budget.

4.1. Payment of Grant. Payment of the Grant is subject to the availability of monies in the Fund allocated to point source pollution control and Section 4.4 herein. Disbursement of the Grant will be in accordance with the payment provisions set forth in Section 4.2 herein and the eligibility determinations made in the Total Project Budget (Exhibit B).

4.2. Disbursement of Grant Funds. The Department will disburse the Grant to the Grantee not more frequently than once each calendar month upon receipt by the Department of the following:

(a) A requisition for approval by the Department, signed by the Authorized Representative and containing all receipts, vouchers, statements, invoices or other evidence that costs in the Total Project Budget, including the applicable local share for the portion of the project covered by such requisition, have been incurred or expended and all other information called for by, and otherwise being in the form of, Exhibit D to this Agreement.

(b) If any requisition includes an item for payment for labor or to contractors, builders or material men, a certificate, signed by the Project Engineer, stating that such work was actually performed or such materials, supplies or equipment were actually furnished or installed in or about the construction of the Eligible Project.

Upon receipt of each such requisition and accompanying certificate(s) and schedule(s), the Director shall request the Comptroller to issue a warrant directing the State Treasurer to disburse the Grant to the Grantee in accordance with such requisition to the extent approved by the Department.

Except as may otherwise be approved by the Department, disbursements shall be held at ninety-five percent (95%) of the total grant amount to ensure satisfactory completion of the Eligible Project. Upon receipt from the Grantee of the certificate specified in Section 4.5 and a final requisition detailing all retainage to which the Grantee is then entitled, the Director, subject to the provisions of this section and Section 4.3 herein, shall request the Comptroller to issue a warrant directing the State Treasurer to disburse to the Grantee the final payment from the Grant.

4.3 Application of Grant Funds. The Grantee agrees to apply the Grant solely and exclusively to the reimbursement of Eligible Project Costs.

4.4 Availability of Funds. The Director and Grantee recognize that the availability of monies in the Fund allocated to point source pollution control is subject to appropriation by the General Assembly and allocations made by the Secretary of Natural Resources, and that at times there may not be sufficient monies in the Fund to permit prompt disbursement of grant funds due and owing the Grantee pursuant to this Agreement. To minimize the potential for such disruption in disbursements of grant funds and in satisfaction of its obligations under the Act, the Department covenants and agrees to (1) manage the allocation of grants from the Fund to ensure full funding of executed grant agreements, (2) forecast the estimated disbursements from the Fund in satisfaction of approved grants and make this forecast publicly available each year for use in the Commonwealth's budgetary process, and (3) promptly disburse to the Grantee any grant funds due and owing the Grantee pursuant to this Agreement when sufficient monies are available in the Fund to make such disbursements. The Department may determine that monies are not sufficient to promptly disburse grant funds when there are competing grant requests. To assist the Department in forecasting estimated disbursements, prior to September 30 of each year the Grantee will provide the Department with a written estimate of its projected expenditures on the Project during the next fiscal year using the same line item cost categories in the Project Budget.

4.5 Agreement to Complete Project. The Grantee agrees to cause the Project to be designed and constructed, as described in Exhibit A to this Agreement, and in accordance with (i) the schedule in Exhibit C to this Agreement and (ii) plans and specifications prepared by the Project Engineer and approved by the Department.

4.6 Notice of Substantial Completion. When the Project has been completed, the Grantee shall promptly deliver to the Department a certificate signed by the Authorized Representative and by the Project Engineer stating (i) that the Project has been completed substantially in accordance with the approved plans and specifications and addenda thereto, and in substantial compliance with all material applicable laws, ordinances, rules, and regulations; (ii) the date of such completion; (iii) that all certificates of occupancy and operation necessary for start-up for the Project have been issued or obtained; and (iv) the amount, if any, to be released for payment of the final Project Costs.

ARTICLE V **PERFORMANCE**

5.0 The Grantee's Facility shall meet a total nitrogen effluent concentration limitation of 5.0 mg/l on an annual average basis, except as provided in paragraph 5.1 and Article VIII of this Agreement.

5.1 If, pursuant to Section 10.1-1187.6 of the Code, the State Water Control Board approves an alternative compliance method to technology-based concentration limitations in Virginia Pollutant Discharge Elimination System permits, the concentration limitations in Section 5.0 above shall be suspended subject to the terms of such approval. The terms of approval shall include requirements for operation of the installed Nutrient Removal Technology at the treatment levels for which it was designed.

ARTICLE VI **OPERATION AND MAINTENANCE**

6.0 No later than ninety (90) days after issuance of a Certificate to Operate for the Project, the Grantee shall submit to the Department, for review and approval, an operation and maintenance manual for the Project. As required by the Grantee's VPDES permit, the Facility shall be operated and maintained in a manner consistent with the operation and maintenance manual as approved by the Department.

ARTICLE VII

MONITORING AND REPORTING

7.0. Monitoring. The Grantee shall monitor compliance with the numerical concentrations in Article V of this Agreement. Monitoring will be conducted at the final effluent from the facility and immediately prior to discharge to the James River. Sampling frequency and type shall be in accordance with VPDES permit requirements. In the absence of total nitrogen VPDES permit monitoring requirements, monitoring shall consist of a sample type and collection frequency as specified in the Chesapeake Bay General Watershed Permit Regulation (9 VAC 25-820-70.Part 1.E.). Each sample will be analyzed for total nitrogen using EPA-approved test methods and reported to the Department.

7.1. Reporting. Beginning with the Project's first full calendar year of operation and each year thereafter, the Grantee will calculate the annual average concentration for total nitrogen for the calendar year just ended by dividing the sum of the monthly average concentrations by twelve, and submit the results to the Department using the form attached as Exhibit E to this Agreement on or before February 1 of each year. Data excluded from the average based on the occurrence of extraordinary conditions will be identified in the report.

ARTICLE VIII

MATERIAL BREACH

8.0. Material Breach. Any failure or omission by the Grantee to perform its obligations under this Agreement, unless excused by the Department, is a material breach.

8.1. Notice of Material Breach. If at any time the Grantee determines that it is unable to perform its obligations under this Agreement, the Grantee shall promptly provide written notification to the Department. This notification shall include a statement of the reasons it is unable to perform, any actions to be taken to secure future performance and an estimate of the time necessary to do so.

8.2. Monetary Assessments for Breach. In no event shall total Monetary Assessments pursuant to this Agreement exceed (i) \$828,009 annually or (ii) \$16,560,174 during the life of this Agreement. Monetary Assessments will be paid into the State Treasury and credited to the Fund. The Director's right to collect Monetary Assessments does not affect in any way the Director's right to secure specific performance of this Agreement using such other legal remedies as may otherwise be available. Within 90 days of receipt of written demand from the Director, the Grantee shall pay the following Monetary Assessments for the corresponding material breaches of this Agreement unless the Grantee asserts a defense pursuant to the requirements of Section 8.3 herein.

(a) Beginning with the Project's first full calendar year of operation following issuance of a Certificate to Operate for the Project, for exceedance of one or both of the numerical concentration limitations applicable under Article V of this Agreement, except where the exceedance is no greater than 0.8 mg/L for total nitrogen or no more than 10%, whichever is greater, or no greater than

0.1 mg/L for total phosphorus or no more than 10%, whichever is greater, an assessment calculated as follows:

(i) For noncompliance with the total nitrogen effluent limitation in Article V, an assessment calculated using the formula in Exhibit F to this Agreement for each one-tenth of a milligram per liter of total nitrogen in excess of the limitation in Article V.

(ii) For noncompliance with the total phosphorus effluent limitation in Article V, an assessment calculated using the formula in Exhibit F to this Agreement for each one-tenth of a milligram per liter of total phosphorus in excess of the limitation in Article V.

(b) For noncompliance with any deadline in Exhibit C to this Agreement, Article VII of this Agreement, or the failure to submit the operations and maintenance manual in accordance with Article VI of this Agreement, an assessment in the amount of \$500 per day for the first 10 days of noncompliance, and \$1,000 for each day of noncompliance thereafter. Noncompliance with interim deadlines shall be excused where the Grantee complies with the final deadline in Exhibit C to this Agreement.

(c) For noncompliance with the obligation to operate and maintain the Project in a manner consistent with the manual pursuant to Article VI of this Agreement, an assessment in the amount of \$1,000 for each day of noncompliance.

8.3 Extraordinary Conditions.

(a) The Grantee may assert and it shall be a defense to any action by the Director to collect a Monetary Assessment or otherwise secure performance of this Agreement that the alleged non-performance was due to Extraordinary Conditions, provided that the Grantee:

(1) takes reasonable measures to effect a cure or to minimize any non-performance with the Agreement, and

(2) provides written notification to the Department of the occurrence of Extraordinary Conditions, together with an explanation of the events or circumstances contributing to such Extraordinary Conditions, no later than 5 days after the discovery of the Extraordinary Conditions and the resulting impacts on performance.

(b) If the Department disagrees that the events or circumstances described by the Grantee constitute Extraordinary Conditions, the Department must provide the Grantee with a written objection within sixty (60) days of Grantee's notice under paragraph 8.3(a)(2), together with an explanation of the basis for its objection.

8.4 Resolution and Remedy. If no resolution is reached by the parties, the Director or Department may immediately pursue any remedy available at law or equity. In any such action, the Grantee shall have the burden of proving that the alleged noncompliance was due to Extraordinary Conditions. In addition to any other remedy that may be available to the Director or the Department, the Director or Department may bring an action in the Circuit Court of the City of Richmond to enforce this Agreement by injunction or mandamus or stipulated penalties or to recover part or all of the grant funds. No such remedy of the Director or Department shall be deemed to be exclusive or to estop any other such remedy or the bringing of an action to enforce this Agreement. The Grantee agrees to venue to any such action in

the Circuit Court of the City of Richmond, either north or south of the James River in the option of the Director. The Grantee further agrees that, in light of the public purpose of nutrient removal, any failure of the Grantee to perform its duties under this Agreement and any failure of the Project to meet the requirements of this Agreement or the requirements of any permit that may be issued by the Board regarding the Project constitutes irreparable harm to the Commonwealth for which the Director or Department lacks an adequate remedy at law.

ARTICLE IX

GENERAL PROVISIONS

9.0. Effect of the Agreement on Virginia Pollutant Discharge Elimination System (VPDES) Permit. This Agreement shall not be deemed to relieve the Grantee of its obligations to comply with the terms of its VPDES permit issued by the Board.

9.1. Disclaimer. Nothing in this Agreement shall be construed as authority for either party to make commitments which will bind the other party beyond the covenants contained herein.

9.2. Non-Waiver. No waiver by the Director of any one or more defaults by the Grantee in the performance of any provision of this Agreement shall operate or be construed as a waiver of any future default or defaults of whatever character.

9.3. Integration and Modification. This Agreement constitutes the entire Agreement between the Grantee and the Director. No alteration, amendment or modification of the provisions of this Agreement shall be effective unless reduced to writing, signed by both the parties and attached hereto. The Department and the Grantee shall confer within six months after each reissuance of the Grantee's VPDES permit for the purpose of determining whether this Agreement should be modified or terminated. This Agreement may be modified by agreement of the parties for any purpose, provided that any significant modification to this Agreement must be preceded by public notice of such modification.

9.4. Collateral Agreements. Where there exists any inconsistency between this Agreement and other provisions of collateral contractual agreements which are made a part of this Agreement by reference, the provisions of this Agreement shall control.

9.5. Non-Discrimination. In the performance of this Agreement, the Grantee warrants that it will not discriminate against any employee, or other person, on account of race, color, sex, religious creed, ancestry, age, national origin or other non-job related factors. The Grantee agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

9.6. Conflict of Interest. The Grantee warrants that it has fully complied with the Virginia Conflict of Interest Act as it may apply to this Agreement.

9.7. Applicable Laws. This Agreement shall be governed in all respects whether as to validity, construction, capacity, performance or otherwise, by the laws of the Commonwealth of Virginia. The Grantee further agrees to comply with all laws and regulations applicable to the Grantee's performance of its obligations pursuant to this Agreement.

9.8. Records Availability. The Grantee agrees to maintain complete and accurate books and records of the Project Costs, and further, to retain all books, records, and other documents relative to this

Agreement for three (3) years after final payment. The Department, its authorized agents, and/or State auditors will have full access to and the right to examine any of said materials during said period. Additionally, the Department and/or its representatives will have the right to access work sites during normal business hours, after reasonable notice to the Grantee, for the purpose of ensuring that the provisions of this Agreement are properly carried out.

9.9. Severability. Each paragraph and provision of this Agreement is severable from the entire Agreement; and if any provision is declared invalid, the remaining provisions shall nevertheless remain in effect.

9.10. Notices. All notices given hereunder shall be in writing and shall be sent by United States certified mail, return receipt requested, postage prepaid, and shall be deemed to have been received at the earliest of: (a) the date of actual receipt of such notice by the addressee, (b) the date of the actual delivery of the notice to the address of the addressee set forth below, or (c) five (5) days after the sender deposits it in the mail properly addressed. All notices required or permitted to be served upon either party hereunder shall be directed to:

Department: Virginia Department of Environmental Quality
Chesapeake Bay Program
P.O. Box 1105
Richmond, VA 23218
Attn: WQIF Program Manager

Grantee: Chesterfield County
P.O. Box 608
Chesterfield, VA 23832
Attn: Director of Public Utilities

9.11. Successors and Assigns Bound. This Agreement shall extend to and be binding upon the parties hereto, and their respective legal representatives, successors and assigns.

9.12. Exhibits. All exhibits to this Agreement are incorporated herein by reference.

9.13. Termination. This Agreement shall terminate 20 years after the Agreement is executed by both parties or by an earlier date by agreement of the parties; provided, however, that except for termination for cause due to Material Breach, the Director's obligation under Section 4.1 herein to pay the Grant amount shall survive termination if such amount has not been paid in full as of the termination date.

ARTICLE X **COUNTERPARTS**

10. This Agreement may be executed in any number of Counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

ARTICLE XI **NUTRIENT CREDITS TO BE MADE AVAILABLE FOR EXCHANGE**

11. To aid in implementing the Nutrient Credit Exchange Program, the Grantee shall make all Point Source Nitrogen and Phosphorus Credits generated in a calendar year available for nutrient allocation compliance. "Point Source Nitrogen Credit" and "Point Source Phosphorus Credit" shall have the meaning as defined in Virginia Code §62.1-44.19:13. The amount of Credits and facilities authorized to generate Credits shall be governed by the Watershed General Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading (9 VAC 25-820). The Department shall control Credits not otherwise used by the Grantee for waste load allocations or compliance purposes and will make such Credits reasonably available to other dischargers for nutrient allocation compliance through the Water Quality Improvement Fund. For purposes of this Agreement, "used by the Grantee" shall include any use whereby the Credits are applied to any compliance obligation of the Grantee, included within an individual compliance plan or basin-level compliance plan of the Virginia Nutrient Credit Exchange Association, or traded to and used by the owner or operator of another facility for nutrient allocation compliance.

WITNESS the following signatures, all duly authorized.

DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY

By: _____

Date: _____

GRANTEE'S AUTHORIZED REPRESENTATIVE

By: _____

Date: _____

EXHIBIT A
PROJECT DESCRIPTION

Grantee: Chesterfield County

Grant: #440-S-09-07

Chesterfield County owns and operates the Falling Creek WWTP, which provides secondary treatment for a permitted design flow of 10.1 MGD. The existing WWTP consists of: screening, grit removal, communitation, flow equalization, primary sedimentation, activated sludge with seasonal denitrification, secondary clarification, chemical coagulation and sedimentation, chlorination, post-aeration, and dechlorination. Sludge is anaerobically digested and land applied.

Under new nutrient discharge control regulations for the Chesapeake Bay and its tributaries, the County received a combined, bubble waste load allocation for nitrogen and phosphorus for its two treatment plants discharging within the James watershed.

As per the Preliminary Engineering (Nutrient Compliance) Report revised in September 2007, the County will upgrade the existing secondary treatment process to an enhanced nutrient removal system designed for annual average effluent concentrations of 5.0 mg/l total nitrogen.

This project consists of various facilities included in the PER which are intended to achieve nutrient compliance. Processes being funded for nitrogen compliance are described as follows:

Headworks and Primary Treatment Areas:

Fine screens are proposed in the plant upgrade. The screens provide protection to the Integrated Fixed Film Activated Sludge (IFAS) system in particular; but, they will also improve downstream processes (such as clarification and sludge handling). Due to lower maintenance requirements and owner preference, center flow band screens - installed upstream of the primary clarifiers -- are anticipated for the final design. Influent flow to the screen facilities will be pumped from the existing pump station; but, a building will be required to house the center flow band screens and screenings handling equipment

Secondary Treatment: Secondary treatment facilities and upgrades for a 4-stage activated sludge, biological nutrient removal process includes the following.

A baffle wall will be placed in the initial chamber of each basin to provide aerobic and anoxic cells. The IFAS system is anticipated to operate using an initial anoxic zone, followed by aerobic conditions, a second anoxic zone, and then a small aeration zone at the end. The first anoxic zone would receive a recycle of nitrates from the tail-end of the first aerobic section, as well as the influent and the RAS flows. Mixers will be installed in the anoxic zones. The first aerobic compartment will contain the suspended IFAS media and retention screens. The existing aeration grid will require modification to maintain the media screen which keeps the media from traveling forward and to supply air via fine bubble, membrane diffusers for the increased biological activity. The second anoxic zone receives the forward flow and the supplemental carbon, associated with denitrification.

The existing internal nitrate recycle pumps push flow through the wall. These pumps cannot remain in service, because the changing location of the aerobic environment will require similar pumps and additional piping to direct the flow.

The aeration system will also require better control than is currently available at the plant. The existing

blower building includes five multi-stage centrifugal blowers with space and piping connections for a sixth blower unit. The total blower capacity for the existing system is 16,000 scfm, with a firm capacity of 12,000 scfm (largest unit out of service). Existing blower No. 1, 2, and 7 were installed in the late 1970's; while existing blower No. 4 and 5 were installed in the mid-1990's. Although the existing blowers have a total design capacity of 16,000 scfm, new blowers are included due to concerns regarding age and reliable capacity of the existing blowers.

As per SCAT Regulations, the blower system is designed for worst case (peak hourly) air demand. Five new multi-stage centrifugal blowers are proposed to meet the air demands for the IFAS system (4 duty and 1 standby). New above-grade process air piping is anticipated to avoid underground pipe conflicts. Each aeration tank lateral will be provided with an isolation butterfly valve, and will feed air drop legs with flow meters and control valves at each aeration zone.

Clarifiers: The secondary clarifiers perform well and no modification is proposed. The tertiary clarifiers also perform well and no modification is proposed.

Chemical Feed Systems: Carbon for denitrification will require chemical storage/feed and final design will identify the carbon sources for use. While methanol is the traditional chemical, the facility will be constructed so other formulations (acetic acid or sugar solutions) can be used.

Process Piping Improvements: An existing 30-inch pipe line between two junction boxes at the west primary clarifiers may be utilized to send flow from the new screening facilities to the west primary clarifiers. However, a new routing on the south side of the primary clarifiers will be required to provide screened wastewater to the east clarifiers.

Flow distribution from the screen facilities to both east and west clarifiers will be evaluated. A new flow distribution chamber will likely be included in the final design.

EXHIBIT B
TOTAL PROJECT BUDGET

Grantee: Chesterfield County
Grant: #440-S-09-07

The following budget reflects the estimated costs associated with eligible components of the Project.

PROJECT COMPONENT	PROJECT COSTS	% ELIGIBLE	ELIGIBLE PROJECT COSTS	NOTES(1)
Fine Screen and Building	\$8,356,500	75%	\$6,267,375	1
Primary Distribution Structure	\$1,588,200	32%	\$508,224	2a
Process Flow Control	\$942,000	70%	\$659,400	3
Process Blowers	\$3,180,960	95%	\$3,021,912	2b
Biological Basin Modifications	\$8,826,000	100%	\$8,384,700	4
Supplemental Carbon Storage/Feed	\$4,896,000	100%	\$4,896,000	4
Construction Subtotal	\$27,789,660	85.4%	\$23,737,611	
General Site Work & Piping	\$360,000	85.4%	\$307,508	5
Nonspecific Construction Subtotal	\$360,000	85.4%	\$307,508	
Construction Total	\$28,149,660	85.4%	\$24,045,119	
Preliminary Engineering Report	\$282,899	85.4%	\$241,649	5
Final Design (Plans & Specs)	\$3,449,587	85.4%	\$2,946,598	5
CM/Inspection	\$1,243,722	85.4%	\$1,062,373	5
Engineering Total	\$4,976,208		\$4,250,620	
Construction Contingency	\$1,407,483		\$1,202,256	5, 6
TOTALS	\$34,533,351		\$29,497,995	
GRANT PERCENTAGE			35%	
GRANT AMOUNT			\$10,324,298	

Notes on costs attributable to Nutrient Removal Technology (NRT):

1. Similar to the membrane bioreactor, fine screening is needed ahead of the IFAS process. DEQ Guidance Memorandum (GM) #06-2012 allows a maximum eligibility for the membrane bioreactor as 75%; this was determined as appropriate.
2. a) Eligible percentage for the unit process, as determined per DEQ Guidance Memorandum (GM) #06-2012 (less 8% attributable to TP for which funding was not wanted).
b) Eligible percentage for the unit process, as determined per DEQ Guidance Memorandum (GM) #06-2012 (less 5% attributable to TP for which funding was not wanted).
3. Represents a negotiated value: RAS piping/meters are 100% eligible based on ammonia control requirement; influent control valves/meters are not eligible.
4. Considered to be 100% NRT; thus, Eligible percentage for the unit process, as determined per DEQ Guidance Memorandum (GM) #06-2012.
5. Represents the construction costs associated with NRT divided by the total construction cost, as per DEQ GM #06-2012.
6. Contingency costs are shown as 5%; contingency will be recalculated after bids after

received.

EXHIBIT C

PROJECT SCHEDULE

Grantee: Chesterfield County

Grant: #440-S-09-07

The Grantee has proposed the following schedule of key activities/milestones as a planning tool which may be subject to change. In particular, the Grantee acknowledges that the appropriate approval (Certificate to Construct) must be issued by the Department prior to proceeding with construction. Unless authorized by a grant modification, it is the responsibility of the Grantee to adhere to the anticipated schedule for the project as follows:

Activity	Date
a. Submit Approvable Plans and Specifications	On or before Sept. 30, 2008
b. Issue Notice to Proceed for NRT project	On or before Jan. 31, 2009
d. Submit letter of Substantial Completion for the project	On or before Jan. 31, 2011*

* Date will be reevaluated relative to preceding milestones and contractual obligations at the time this Agreement is routinely modified to reflect as-bid costs.

EXHIBIT D

REQUISITION FOR REIMBURSEMENT

(To be on Grantee's Letterhead)

Department of Environmental Quality
Chesapeake Bay Program
P.O. Box 1105
Richmond, VA 23218
Attn.: WQIF Program Manager

RE: **Virginia Water Quality Improvement Fund Grant**
Contract #440-S-09-07

Dear Program Manager:

This requisition, Number _____, is submitted in connection with the referenced Financing Agreements between the Director of the Virginia Department of Environmental Quality and the County of Chesterfield. The effective date of the grant agreement is [insert date of grant agreement].

Unless otherwise defined in this requisition, all capitalized terms used herein shall have the meaning set forth in Article I of the Grant Agreement. The undersigned Authorized Representative of the Grantee hereby requests disbursement of grant proceeds under the Grant Agreement in the amount of \$_____ for the purposes of payment of the Eligible Project Costs as set forth on Schedule I attached hereto.

Copies of invoices relating to the items for which payment is requested are attached.

The undersigned certifies that the amounts requested by this requisition will be applied solely and exclusively to the reimbursement of the Grantee for the payment of Eligible Project Costs.

This requisition includes (if applicable) an accompanying Certificate of the Project Engineer as to the performance of the work.

Sincerely,

(Authorized Representative of the Grantee)

Attachments

cc: DEQ-Regional CAP Engineer

SCHEDULE 1
VIRGINIA WATER QUALITY IMPROVEMENT FUND
FORM TO ACCOMPANY REQUEST FOR REIMBURSEMENT

REQUISITION # _____
 Grantee: Chesterfield County
 Grant: #440-S-09-07

CERTIFYING SIGNATURE: _____
 TITLE: _____

Cost Category	Total Project Cost	WQIF Grant Amount (35% of Eligible Costs)	Previous Grant Disbursements	Grant Disbursements This Period	Combined Disbursement Total To Date	Remaining Balance
Engineering	\$3,732,486	\$1,115,887				
Construction	\$28,149,660	\$8,415,792				
CM/Inspection	\$1,243,722	\$371,830				
Contingency (5% of Construction)	\$1,407,483	\$420,789				
TOTALS:	\$34,533,351	\$10,324,298				

Total Grant Amount \$ _____
 Previous Grant Disbursement \$ _____
 This Grant Request \$ _____
 Total Grant Requested to Date \$ _____
 Grant Proceeds Remaining \$ _____

CERTIFICATE OF THE PROJECT ENGINEER
FORM TO ACCOMPANY REQUEST FOR REIMBURSEMENT

Grantee: Chesterfield County

Grant: #440-S-09-07

This Certificate is submitted in connection with Requisition Number _____, dated _____, 20____, submitted by the _____ (the "Grantee") to the Virginia Department of Environmental Quality. Capitalized terms used herein shall have the same meanings set forth in Article I of the Grant Agreement referred to in the Requisition.

The undersigned Project Engineer for _____ hereby certifies that insofar as the amounts covered by this Requisition include payments for labor or to contractors, builders or material men, such work was actually performed or such materials, supplies, or equipment were actually furnished to or installed in the Project.

(Project Engineer)

(Date)

EXHIBIT E

REPORTING OF ANALYTICAL RESULTS

Grantee: Chesterfield County

Grant: #440-S-09-07

Year: _____

MONTH	PARAMETER	CONCENTRATION (monthly average)	UNITS	FREQUENCY OF ANALYSIS	SAMPLE TYPE
January	Total Nitrogen		mg/l		
February	Total Nitrogen		mg/l		
March	Total Nitrogen		mg/l		
April	Total Nitrogen		mg/l		
May	Total Nitrogen		mg/l		
June	Total Nitrogen		mg/l		
July	Total Nitrogen		mg/l		
August	Total Nitrogen		mg/l		
September	Total Nitrogen		mg/l		
October	Total Nitrogen		mg/l		
November	Total Nitrogen		mg/l		
December	Total Nitrogen		mg/l		
Annual Average	Total Nitrogen		mg/l		

EXHIBIT E

REPORTING OF ANALYTICAL RESULTS
(continued)

Grantee: Chesterfield County

Grant: #440-S-09-07

Data Excluded Due to the Occurrence of Extraordinary Conditions: (if applicable; attach explanation)

Date(s): _____

Operator Responsible for Samples: _____ Date: _____

Telephone: _____ Certificate Number: _____

EXHIBIT F

FORMULA FOR CALCULATING MONETARY ASSESSMENT FOR EXCEEDANCE OF NUMERICAL NITROGEN CONCENTRATIONS

Grantee: Chesterfield County

Grant: #440-S-09-07

Section 1: Nitrogen Exceedances

$$CN = (TNe/TNr) \times AnPay \times PerGrant$$

where:

CN	=	Assessment for Nitrogen Exceedance.
TNe	=	Exceedance in tenths of a milligram per liter.
TNr	=	Expected nitrogen removal (difference between "pre-nutrient removal" annual average concentration and 5.0 mg/l limitation) in tenths of a milligram per liter.
AnPay	=	Annual Payment on grant; assumes principal payments amortized over 20 years and an interest rate of 5 percent. Using these assumed values leads to a "cost recovery factor" of 0.0802. The "cost recovery factor" times the grant amount yields the Annual Payment amount.
PerGrant	=	Percentage of grant received by year of exceedance.

Values used for Grant #440-S-09-07:

Pre-Nutrient Removal TN Concentration	=	20.3 mg/l
Effluent TN Concentration Limitation	=	5.0 mg/l
Total Grant Amount for TN Removal	=	\$10,324,298
Useful Service Life	=	20 years
Interest Rate	=	5 percent

Calculated (assumes grant paid 100%):

Expected Removal (TNr)	=	15.3 mg/l
AnPay	=	\$828,009
CN	=	\$5,412 (for each 0.1 mg/l TN exceedance)